What is claimed:

1. A method for screening for agents that affect protein degradation rates, the method comprising:

taking a library of cells, the cells expressing a fusion protein comprising a reporter protein and a protein encoded by a sequence from a cDNA library derived from a sample of cells, the sequence from the cDNA library varying within the cell library;

contacting the library of cells with a plurality of agents which may affect protein degradation rates;

for each agent, selecting cells in the library which express short-lived proteins based on whether the cells have different reporter signal intensities than other cells in the library, the difference being indicative of the selected cells expressing shorter lived fusion proteins than the fusion proteins expressed by the other cells in the library; and

characterizing the fusion proteins expressed by the selected cells for each agent.

2. A method according to claim 1, wherein the method further comprises comparing which fusion proteins are expressed by the selected cells for each agent.

3. A method for monitoring effects different growth conditions have on expression of short-lived proteins, the method comprising:

exposing samples of cells to different growth conditions;

forming cDNA libraries from the sample of cells after exposure to the different growth conditions;

forming a library of cells for each cDNA library, the cells in the library expressing a fusion protein comprising a reporter protein and a protein encoded by a sequence from the cDNA library derived from a sample of cells, the sequence from the cDNA library varying within the cell library;

for each library of cells,

identifying cells within the library that express fusion proteins that are degraded *in vivo* more rapidly than other fusion proteins, and

characterizing fusion proteins expressed by the identified cells; and

comparing which fusion proteins are characterized for each library of cells, differences in the characterized fusion proteins indicating differences in the short-lived proteins expressed by when the cells are exposed to the different agents.

4. A method according to claim 3, wherein exposing the samples of cells to different conditions comprises exposing the cells to different agents.

5. A method according to claim 3, wherein identifying cells within the library that express fusion proteins that are degraded *in vivo* more rapidly than other fusion proteins comprises

modifying a rate of protein expression or degradation by the cells, and

selecting a population of the cells based on whether the cells have different reporter signal intensities than other cells after the rate of protein expression or degradation has been modified, the difference being indicative of the selected population of cells expressing shorter lived fusion proteins than the fusion proteins expressed by the other cells in the library.

6. A method for monitoring effects different growth conditions have on expression of short-lived proteins, the method comprising:

exposing samples of cells to different conditions;

forming cDNA libraries from the sample of cells after exposure to the different growth conditions;

forming a library of cells for each cDNA library, each cell in the library expressing a fusion protein comprising a reporter protein and a protein encoded by a sequence from the cDNA library derived from a sample of cells, the sequence from the cDNA library varying within the cell library;

for each library of cells,

partitioning the library of cells into populations of cells based on an intensity of a reporter signal from the fusion protein such that cells partitioned into a given population have a reporter signal within a desired range of reporter signal intensity,

modifying a rate of protein expression or degradation by the cells for a given population of cells,

selecting a subpopulation of the cells from the given population of cells based on whether the cells have a different reporter signal intensity than the other cells in the given population, the difference being indicative of the selected subpopulation of cells expressing shorter lived fusion proteins than the fusion proteins expressed by the other cells in the given population

characterizing fusion proteins expressed by at least a portion of the selected cells; and

comparing which fusion proteins are characterized for each library of cells, differences in the characterized fusion proteins indicating differences in the short-lived proteins expressed by when the cells are exposed to the different agents.

7. A method according to claim 6 wherein exposing the samples of cells to different conditions comprises exposing the cells to different agents.

8. A method for screening for differences in short-lived proteins expressed by first and second cell samples, the method comprising:

forming cDNA libraries for first and second samples of cells;

forming a library of cells for each cDNA library, the cells in the library expressing a fusion protein comprising a reporter protein and a protein encoded by a sequence from the cDNA library derived from a sample of cells, the sequence from the cDNA library varying within the cell library;

for each library of cells,

identifying cells within the library that express fusion proteins that are degraded *in vivo* more rapidly than other fusion proteins, and

characterizing fusion proteins expressed by the identified cells; and

comparing which fusion proteins are characterized for each library of cells, differences in the characterized fusion proteins indicating differences in the short-lived proteins expressed by the first and second samples cells.

9. A method for screening for differences in short-lived proteins expressed by first and second cell samples, the method comprising:

forming cDNA libraries for first and second samples of cells;

forming a library of cells for each cDNA library, the cells in the library expressing a fusion protein comprising a reporter protein and a protein encoded by a sequence from the cDNA library derived from a sample of cells, the sequence from the cDNA library varying within the cell library;

for each library of cells,

partitioning the library of cells into populations of cells based on an intensity of a reporter signal from the fusion protein such that cells partitioned into a given population have a reporter signal within a desired range of reporter signal intensity,

modifying a rate of protein expression or degradation by the cells for a given population of cells,

selecting a subpopulation of the cells based on whether the cells have different reporter signal intensities than the other cells after the rate of protein expression or degradation has been modified, the difference being indicative of the selected subpopulation of cells expressing shorter lived fusion proteins than the fusion proteins expressed by the other cells in the given population, and

characterizing fusion proteins expressed by at least a portion of the selected cells; and

comparing which fusion proteins are characterized for each library of cells, differences in the characterized fusion proteins indicating differences in the short-lived proteins expressed by the first and second samples cells.